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# LANDSAT PROGRESS REPORT

E 7.0-10435

NASA-TM-X-72965

PLANNING APPLICATIONS IN EAST CENTRAL FLORIDA

CONTRACT NO. NAS5-20907

BREVARD COUNTY PLANNING DEPARTMENT

REPORT NO. BCPD L2-5

22670

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CENTRAL FLORIDA Progress Report, 12 Feb. -  
11 May 1976 (NASA) 19 p HC \$3.50 CSCL 08B

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LANDSAT PROGRESS REPORT  
FOR THE PERIOD 12 FEBRUARY TO 11 MAY, 1976  
PLANNING APPLICATIONS IN EAST CENTRAL FLORIDA

CONTRACT NO. NAS5-20907

Principal Investigator: John W. Hannah\*

Co-Investigators: Dr. Garland L. Thomas\* *et*  
Fernando Esparza\*\*

Computer Programming: James J. Millard\*\*

REPORT NO. BCPD L2-5

\* Brevard County Planning Department

\*\* NASA, Kennedy Space Center

A. PROBLEMS

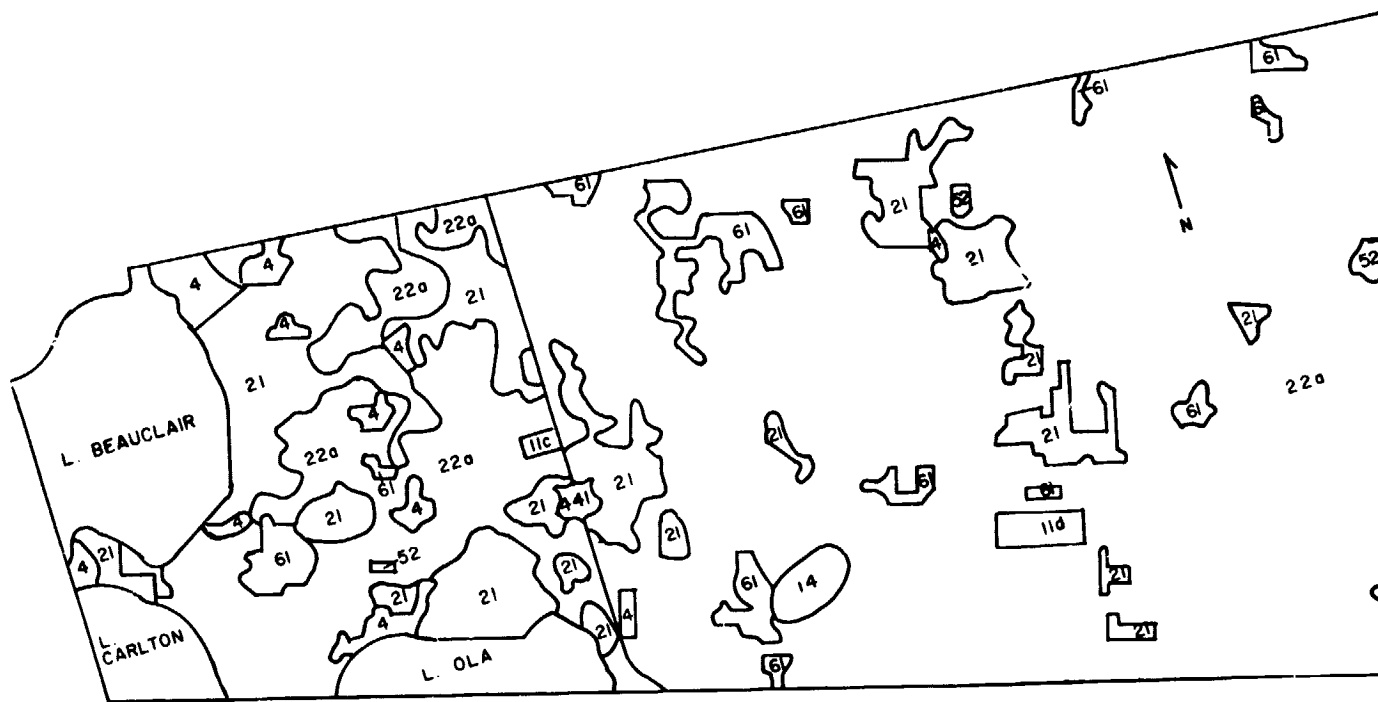
No unanticipated problems are impeding the progress of the investigation.

B. ACCOMPLISHMENTS

Work is continuing on the land use mapping of Orange County. Two additional sectors have been mapped. Tracings of the Landsat classification maps are shown as Figures 1 and 2. Two features in Figure 1 are shown to a higher level of classification than can be ascertained from the satellite data alone: a mobile home park and a mining operation. These were seen on the computer map and identified from local knowledge.

The present procedure is to correct those maps by checking them against existing aircraft photography located in the Orange County Planning Department. This is done in collaboration with an Orange County Planner, Greg Adkins. Corrections made in this way are shown in Figures 3 and 4, where the number outside the parenthesis represents the classification based on the aircraft photography and the number inside the parenthesis represents the classification from the tracing of the Landsat computer map. As can be seen in Figure 3, a significant amount of pasture was misinterpreted as citrus. A lesser problem, seen in Figure 4, was the separation of mature citrus groves and forest.

Tabulations of the various areas and the errors for the two sectors combined are given in Table 1. Tabulation of the accuracy figures is made in such a way that a given small area on the map has the indicated probability of being correct as shown by the map.



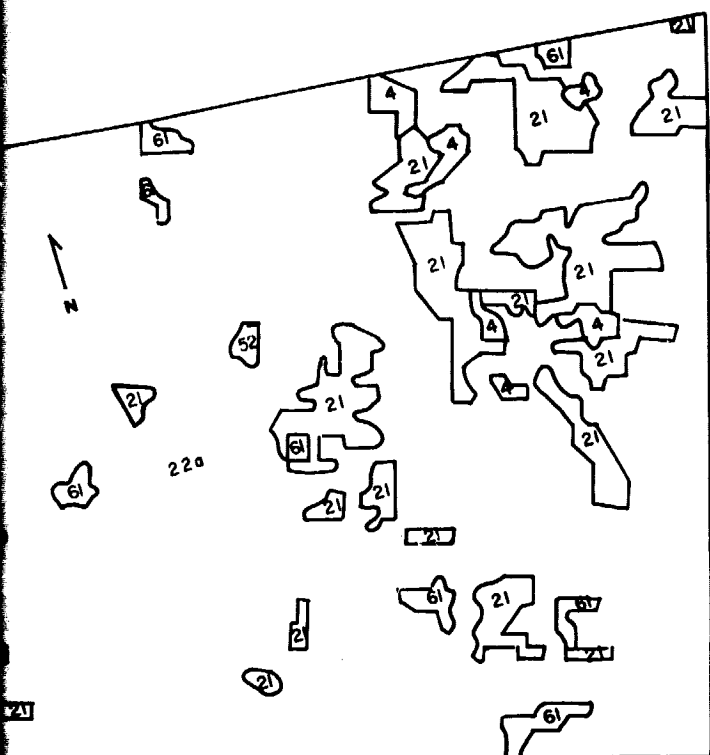
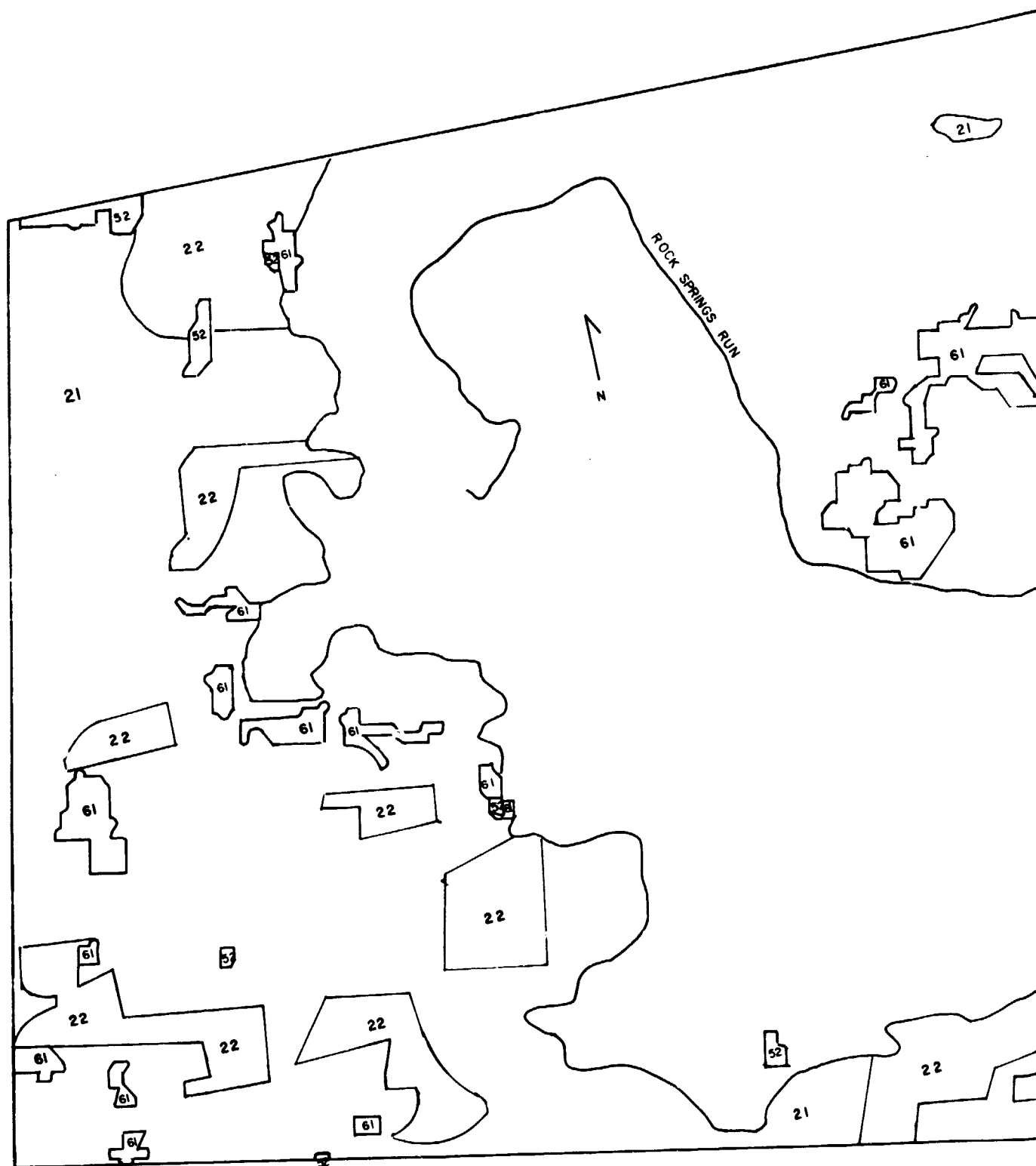


Figure 1

Landsat Map, Northwest Orange County

Scale ~ 1/48,000

FOLDOUT FRAME 5



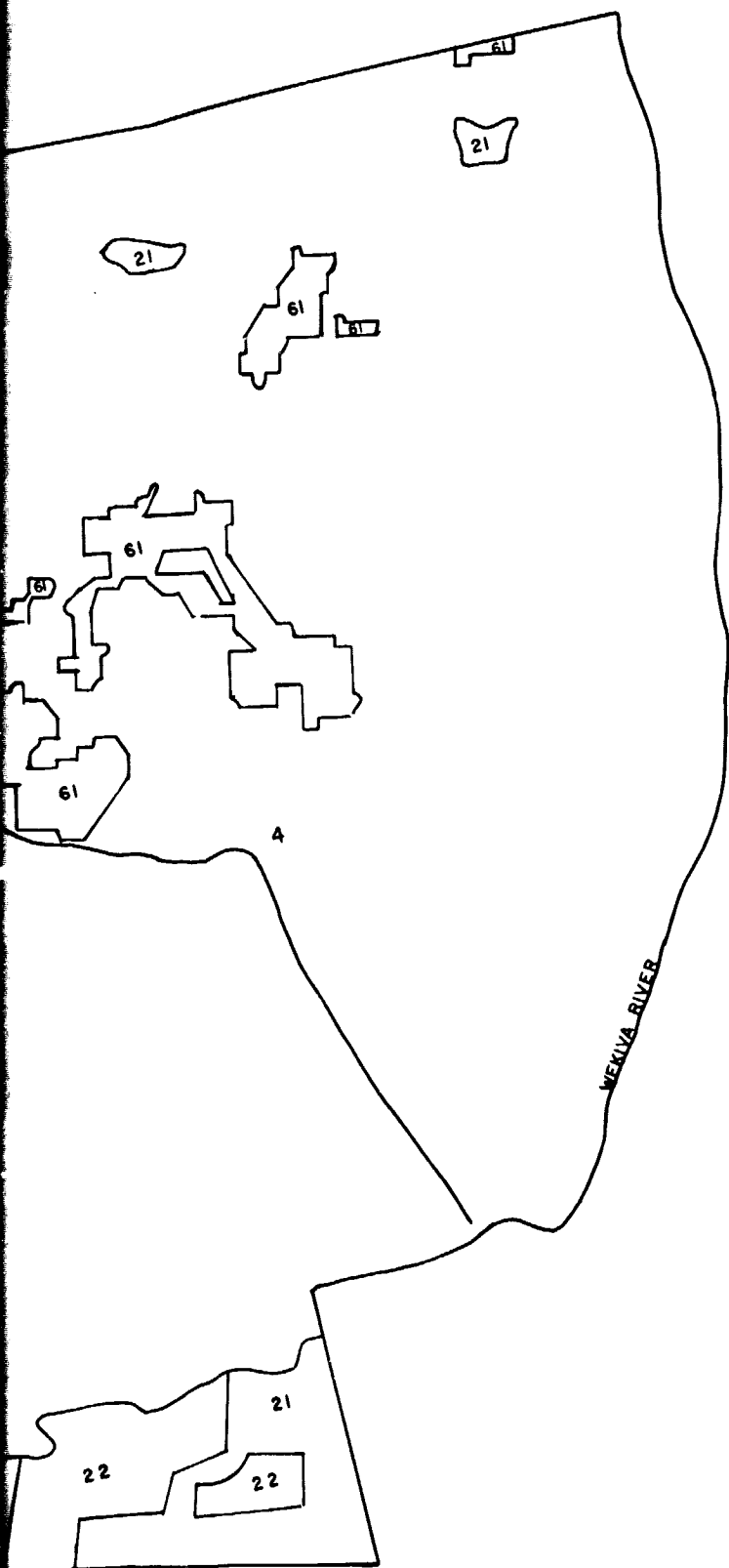


Figure 2

Landsat Map, Wekiva River  
Region of Orange County

Scale ~ 1/48,000

FOLDOUT FRAME 2





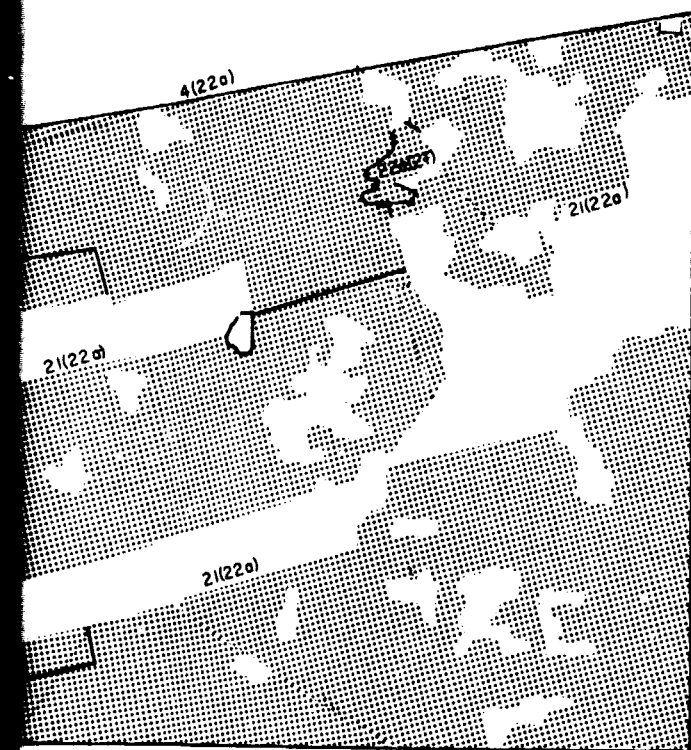


Figure 3

Corrections to Northwest Sector

Scale ~ 1/48,000



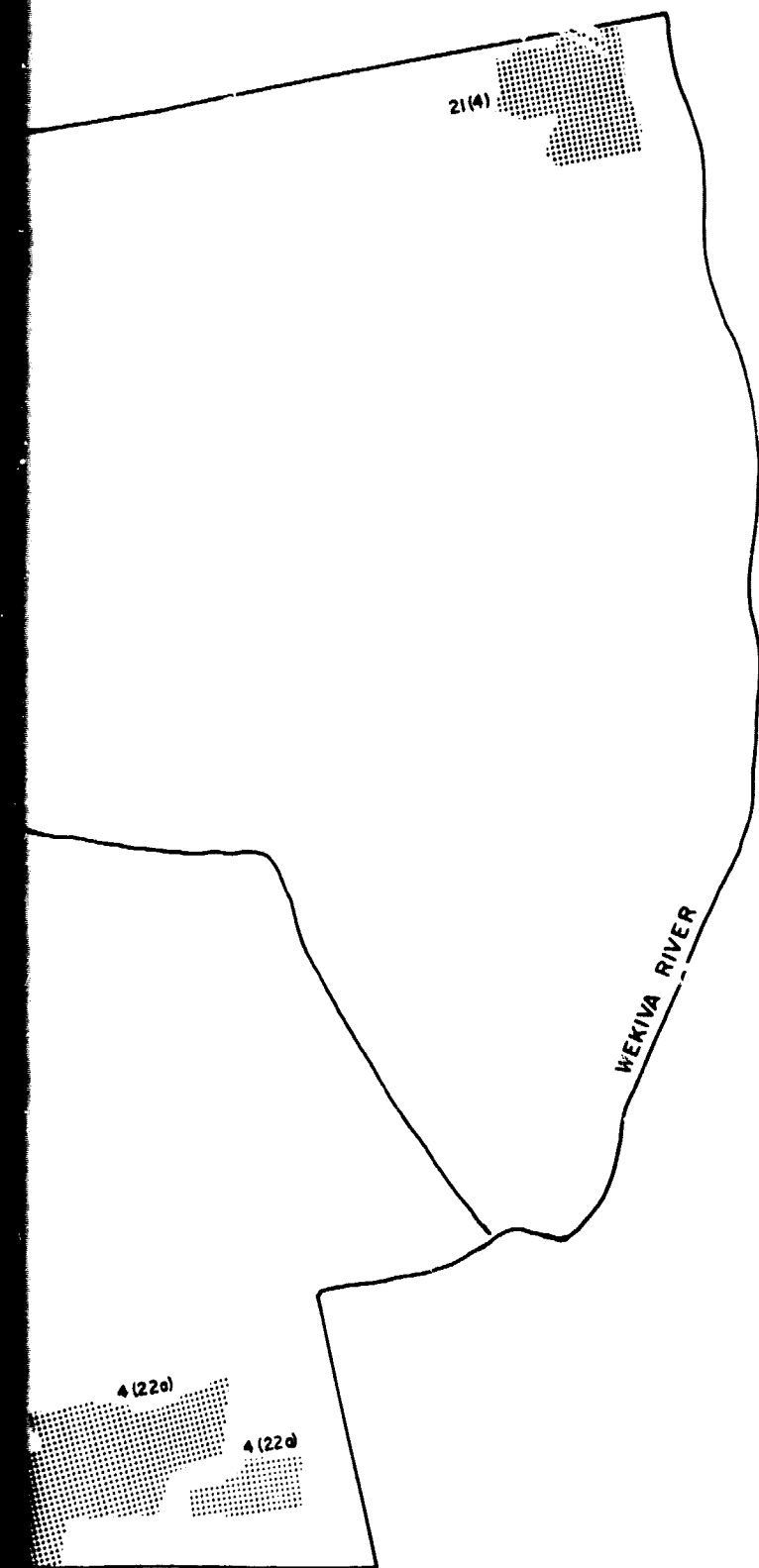


Figure 4

Corrections to Wekiva River Sector

Scale ~ 1/48,000

Cumulative areas and accuracy values for the sectors given in this and the preceeding Progress Report<sup>1</sup> are given in Table 2.

Corrected areas for the various classes will be given later when the results of the final planimeter measurements are available.

TABLE 1

CLASS	AREA PRIOR TO CORRECTION		INCORRECT (HECTARES)	ACCURACY (PERCENT)
	HECTARES	ACRES		
52 Lakes	323	797		100
21c Pasture	3,010	7,425	500	83
22a Citrus	3,761	9,278	2,049	46
61 Marsh	415	1,024	0	100
4 Forest	6,628	16,350	52	99
11c Rural Residential	2	5		
14 Extraction	15	37		
11d Mobile Home Parks	11	27		
Overall	14,165	34,943	2,601	82

<sup>1</sup> BCPD L2-4 Progress Report of 11 February 1976

TABLE 2

CLASS	AREA PRIOR TO CORRECTION		INCORRECT (HECTARES)	ACCURACY (PERCENT)
	HECTARES	ACRES		
52 Lakes	10,120			100
21a Vegetable Farmine (Muck Farms)	4,825	11,904	99	98
21c Pasture	3,010	7,425	500	83
22a Citrus	15,037	37,095	4,275	72
11c Rural Residential	2	5		
11d Mobile Home Parks	11	27		
14 Extraction	15	37		
4 Forest	7,373	18,188	172	98
61 March	764	1,884	124	84
Overall	41,157	76,565	5,170	87

Since the immediate use of these maps is preparation of a land use inventory with traffic zones as the unit for tabulation, the next step in the process is the drawing of traffic zone boundaries on the map. These lines are transferred from another map, using a Bausch and Lomb Zoom Transfer Scope to provide the stretching which corrects for the problem of unequal scales in the two directions on the computer map. Figures 5 and 6 show the corrected maps for the two sectors, with the traffic zone boundaries drawn in.



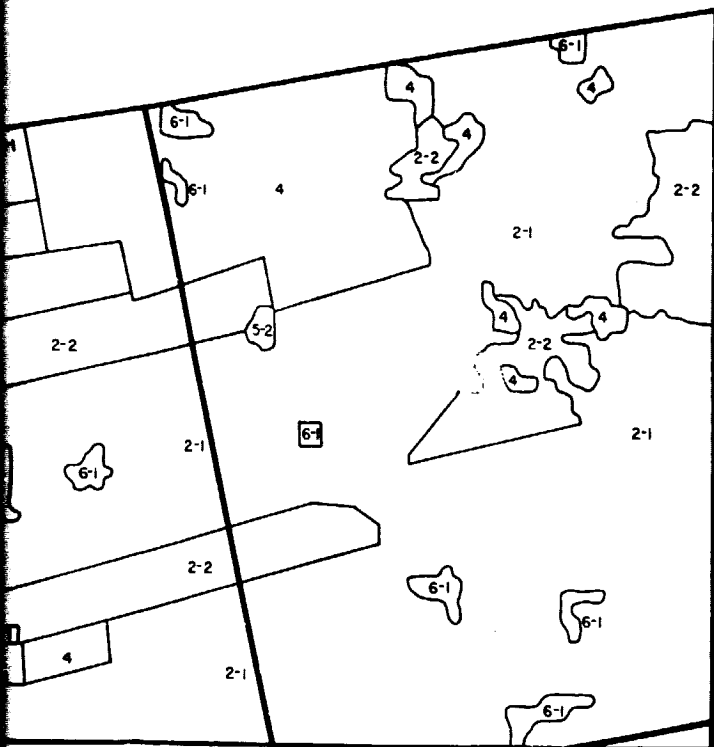


Figure 5

Corrected Map, Northwest Sector

Scale ~ 1/48,000

FOLDOUT FRAME 2







Figure 6

Corrected Map, Wekiva River Sector

Scale ~ 1/48,000

FOLDOUT MAP 2

C. SIGNIFICANT RESULTS

None

D. PUBLICATIONS

None

E. RECOMMENDATIONS

None

F. FUNDS EXPENDED

Expenditures this quarter: \$4,242.00

G. DATA USE

<u>VALUE OF DATA ALLOWED</u>	<u>VALUE OF DATA ORDERED</u>	<u>VALUE OF DATA RECEIVED</u>
\$1,200	\$880	\$1,280

Forty-eight images for six scenes were received. Four sets of digital images were received, two of which had been ordered prior to the beginning of the quarter.

Our last Progress Report<sup>1</sup> indicated a problem in running one set of tapes. The set of tapes was returned to EROS for checking. Nothing was found wrong with the tapes, but a new set of tapes was made and found to run satisfactorily. The cause of the problem still is not known. No further problems have been encountered in running the tapes.

<sup>1</sup> BCPD L2-4 Progress Report of 11 February 1976

## APPENDIX

### LAND-USE CATEGORIES:

#### Level 1

- |                             |   |
|-----------------------------|---|
| 01. Urban and built-up land | 01. Residential <ul style="list-style-type: none"><li>a. Wooded residential</li><li>b. Non-wooded residential</li><li>c. Rural residential</li><li>d. Mobile-home parks</li><li>e. Bare sand (non-landscaped)</li></ul> |
|                             | 02. Commercial and services   |
|                             | 03. Industrial  |
|                             | 04. Extraction <ul style="list-style-type: none"><li>a. Phosphate mines</li><li>b. Reclaimed phosphate mines</li><li>c. Clay mining</li></ul>   |
|                             | 05. Transportation  |
|                             | 07. Strip   |
|                             | 09. Open  |
|                             | 10. Institutional & recreational  |
|                             | 11. New construction  |
| 02. Agricultural land       | 01. Cropland and pasture <ul style="list-style-type: none"><li>a. Muck farms (vegetable)</li><li>b. Vegetable farming</li><li>c. Pasture</li></ul>  |
|                             | 02. Groves <ul style="list-style-type: none"><li>a. Primarily citrus</li></ul>  |
|                             | 03. Bare sand in agricultural sector  |
| 03. Rangeland               | 01. Grass   |
| 04. Forest land             | 01. Deciduous   |
|                             | 02. Evergreen (pine)  |
|                             | 03. Mixed <ul style="list-style-type: none"><li>a. pine and palmetto</li></ul>  |
| 05. Water                   | 01. Streams and waterways   |
|                             | 02. Lakes   |
|                             | 03. Other (Gulf of Mexico)  |
| 06. Nonforested wetland     | 01. Vegetated   |
|                             | 02. Bare  |
| 07. Barren land             | 03. Sand other than beaches   |